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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,086	04/09/2002	Paul Zientek	322-00066	3078
26753	7590	08/17/2006		
ANDRUS, SCEALES, STARKE & SAWALL, LLP 100 EAST WISCONSIN AVENUE, SUITE 1100 MILWAUKEE, WI 53202				
			EXAMINER ANGEBRANNDT, MARTIN J	
			ART UNIT	PAPER NUMBER
			1756	

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/019,086	<b>Applicant(s)</b> ZIENTEK, PAUL	
	<b>Examiner</b> Martin J. Angebranndt	<b>Art Unit</b> 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 2/23/06, 2/27/06 & 6/7/06.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-12,18,35-37,41 and 42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-12,18,35-37,41 and 42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/07/06</u> . | 6) <input type="checkbox"/> Other: _____  |

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1. The response provided by the applicant has been read and given careful consideration.

Responses to the arguments of the applicant are presented after the first rejection to which they seem most directed. The submissions of 2/23/06, 2/27/06 and 6/7/06 are duplicates.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1,3,4,6,7,10-12,18,35-37 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miekka et al. WO 89/03760, in view of JP 11-064614, GB 2222696 and Chatwin et al. '370.

Miekka et al. WO 89/03760 teaches the coating of a paper substrate with a thermoplastic coating, the softening of the resinous layer and embossing the thermoplastic layer with a hologram or diffraction pattern (4/1-5/5). A similar process where the substrate is a heat resistant plastic film is disclosed. (5/23-35). The thermoplastic coating can be tinted or metallized on the side not embossed. (6/1-5). The relief surface can also be metallized after

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embossment (7/3-13). The thermoplastic coating may be polyethylene. (8/15). The use of a polystyrene embossable coating is disclosed. (example 1)

JP 11-064614 (machine translation attached) teaches the use of masked laser exposure to machine (ablate) grating patterns in the polymer film backed by the reflective layer. (See figures 5, 8, 6,9 and corresponding text [0029-0031, 0035], example 1 [0025-0026], and abstract). The use of a mask is disclosed as preferable to resist processing and the use of a mask obviates the need for the vibration control [0005-0008] The polymeric materials may be transparent or light absorbing [0011]. The polymeric materials which may be ablated includes PET, polycarbonate, polyimide resins and others [0039]. As polymeric materials generally absorb strongly in the UV, UV lasers are used. The use of multilayered polymeric films is also disclosed. [0043-0044].

GB 2222696 teaches excimer laser ablation to directly form a grating in a plastic substrate and described the coating of the grating with a reflective layer. (page 2). The use of polycarbonate, polyethylene terephthalate (PET and polyimide is disclosed. (page2)

Chatwin et al. '370 teaches a substrate comprising a transparent thermoplastic material which has been embossed with a holographic relief pattern, followed by providing a thin metallic coating and indicia receptive coating covering the non-embossed areas and a transparent lacquer (10/28-44). In the embodiment of figures 2 or 3, the substrate may be a transparent or opaque polymer composition. (11/7-58). The substrate may be polypropylene, PVC, cellulose acetate or polyester and may be supported by another film. (6/18-27).

It would have been obvious to one skill in the art to modify the process disclosed on page 5 of Miekka et al. WO 89/03760 by using other known processes for forming holograms in the resin layer, such as the direct laser ablation taught by JP 11-064614 using a mask with a

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reasonable expectation of forming a useful holographic object based upon the ablation of polymeric resins disclosed by JP 11-064614 and GB 2222696 with UV lasers in the absence of pigmentation of the polymeric layer due to the strong absorption of polymers in the UV as discussed by JP 11-064614 and GB 2222696 with the advantage of obviating the need for a heating and embossing step and to use transparent polymeric/plastic supports, such as those taught by Chatwin et al. '370 based upon the direction to polymeric supports by Miekka et al. WO 89/03760.

The response relies upon the declaration. The previous rejections are withdrawn due to the transparent substrate being the document itself. The affidavit states that the formation of an integral hologram in the document obviates the high cost of producing the foils and the poor adhesion properties. It is not clear what the added cost alleged by the applicant would be due to. The primary reference embosses the layer formed on the substrate and suffers the disadvantage of requiring heating of the layer to soften it and render it amenable to embossing, which is cured by the use of laser ablation taught in the secondary references. In both Miekka et al. WO 89/03760 and Chatwin et al. '370, the added step of contacting a holographic foil with the final substrate is not required. The applicant has not provided evidence that the ablated hologram differs from that formed by embossing and either process would be expected to form identical holograms. The applicant states that less energy is required for ablating the applied layer, rather than the substrate or the metal layer itself and result in a speedier process. This is not supported by any evidence and there is no limitation precluding the coated layer from being the same composition as the substrate. The applicant argues that the use of the mask as discussed with respect to JP 11-064614, rather than a two beam process of GB 2222696 is that more complex

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diffractive patterns can be formed and there are fewer alignment issues. This is likely dependent upon the composition and the thickness of the ablatable layer, which the specification fails to describe. The examiner notes that the claims do not describe the complexity of the diffractive patterns, nor does the specification. The grating patterns formed by JP 11-064614 or GB 2222696 are clearly within the scope of coverage sought. Also the use of plural or single shots is not discussed in the specification, nor present in the claims and therefore cannot be persuasive. In the analysis of JP 11-064614, the applicant misses the “the upper high polymer film and a lower high polymer film” appearing in [0044]. The applicant misses the point that the polymeric materials themselves are evidenced to be amendable to laser ablation in the absence of pigments by the showing of JP 11-064614 and GB 2222696 which supports a position of a reasonable expectation of success by one skilled in the art in laser processing them directly, rather than using a resist with all the additional steps that would entail. It is clear from the disclosure at pages 4 and 6, that the windows formed by the opacifying layers are formed after the formation of the grating/diffractive area. Also the use of a paper or opaque substrate with openings in it is not contemplated by the specification as filed.

5. Claims 1,3,4,6,7,10-12,18,35-37 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miekka et al. WO 89/03760, in view of JP 11-064614, GB 2222696 and Chatwin et al. ‘370, further in view of Takeuchi et al. ‘857 and Greenaway ‘700.

Takeuchi et al. ‘857 teach translucent/transparent holograms having the various structures shown in the figures. The holographic enhancing layer may be any of a variety of materials including thin metal films, polymers and various pigment compositions (col 6-9.). The hologram forming layer may be a single or multilayered structure, such as a substrate provided with a

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resins film into which the hologram is formed. (4/35-42). Useful resins include polycarbonate, polyesters and the like (4/61-6/64). The support may include a protective layer (13/5-21). The final support may be transparent or opaque and may be papers, plastics/polymers, metals etc (19/11-58).

Greenaway '700 teaches the a document, such as a banknote, security, identity card or the like is coated with a coating of a thermoplastic material to form a smooth surface and then the thermoplastic coating can be embossed with a diffractive pattern and the remaining portion can be printed upon. (2/9-55). The embossed marking can be protected form damage by providing a transparent protective coating of a material having a different refractive index. A reflective layer can also be provided.

In addition to the basis provided above, the examiner holds that it would have been obvious to modify the combination of Miekka et al. WO 89/03760 with JP 11-064614, GB 2222696 and Chatwin et al. '370 by providing the reflective layer directly onto the relief diffractive susfrcae or to use a resinous material having a different refractive index from the resins bearing the relief image based upon the direction within Takeuchi et al. '857 and Greenaway '700 and further, to use reflective layers with metal particles in them based upon the teachings of Takeuchi et al. '857 with a reasonable expectation of forming a useful diffractive article. Further it would have been obvious to apply the opaque indicia receptive layer to the reflective layer to allow the printing of information based upon the teachings of Chatwin et al. '370.

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6. Claims 1,3,4,6-12,18,35-37 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miekka et al. WO 89/03760, in view of JP 11-064614, GB 2222696, Chatwin et al. '370, Takeuchi et al. '857 and Greenaway '700, further in view of JP 06-51683

JP 06-51683 teaches holograms allowing only a partial view, where the holographic layer is a polymeric resin and is coated in areas with a material (3) having the same reflective index as the polymeric resins, thereby hiding the hologram in those areas. Additionally, these may be hiding layers (5 and 1 on the side opposite the holographic relief as shown in figure 8. The base materials may be a plastic [0013]. The metallization of the hologram is disclosed. [0021-0022]. This may be considered a translucent hologram.

In addition to the basis provided above, it would have been obvious to modify the invention of Miekka et al. WO 89/03760, in combination with JP 11-064614, GB 2222696, Chatwin et al. '370, Takeuchi et al. '857 and Greenaway '700 by applying hologram obscuring areas on the back as taught by JP 06-51683 to add a further dimension to the holographic/diffractive effect with a reasonable expectation of forming a useful holographic article based upon the same effect being realized by Chatwin et al. '370. Further, figure 1, clearly shows the use of a transparent polymeric layer (2) provided on a substrate and serves to reinforce the obviousness of the multilayer embodiment of Taniguchi et al.

The applicant argues that JP 06-51683 teaches away from the claimed invention. The examiner disagrees, noting the use of hiding layers in the same manner as Chatwin et al. '370 and further noting that these are not applied to any other substrates as inferred by the applicant.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



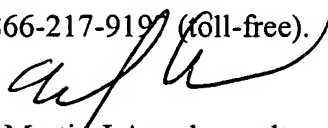
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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J Angebranndt  
Primary Examiner  
Art Unit 1756